DOCUMENT RESUME

ED 268 895 HE 019 260

AUTHOR Gallagher, Karen S.; And Others
TITLE Personal and Organizational Factors Affecting Faculty Productivity: The Socialization Process in Graduate School. ASHE 1986 Annual Meeting Paper.
PUB DATE Feb 86
NOTE 24p.; Paper presented at the Annual Meeting of the Association for the Study of Higher Education (San Antonio, TX, February 20-23, 1986).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS *College Faculty; *Graduate Study; Higher Education; Intellectual Disciplines; Organizational Theories; *Productivity; Professional Recognition; *Research; *Research Universities; Rewards; Scholarship; *Socialization; Teacher Characteristics; Teacher Motivation; Writing for Publication
IDENTIFIERS *ASHE Annual Meeting; Biglan Model

ABSTRACT

Scholarly productivity of faculty was studied based on the Brim and Wheeler framework of socialization, which takes into account personal and organizational influences on socialization outcomes. Specific influences included norms governing the system, the university's capacity to provide relevant performance opportunities, and the school's reward/sanction structure. A survey was sent to of Ph.D. and Ed.D. recipients who graduated between 1963 and 1984 from a private urban university (a Carnegie classification Research II institution). The sample of 271 faculty held current appointments. The effects of the Biglan model of academic disciplines as an explanation of productivity differences were also examined. Results indicated that several dimensions of the socialization framework appeared to be significant in distinguishing differences in graduate program experiences and faculty productivity. Preliminary evidence indicates the generalizability of the Brim and Wheeler framework to a Research II institution. In general, faculty productivity in this group tended to be low and the variation in performance high. Producers were found in academic disciplines with highly developed paradigms and with life systems focus. (SW)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED268895

Personal and Organizational Factors Affecting Faculty Productivity: The Socialization Process in Graduate School

Karen S. Gallagher
University of Cincinnati
Don Hossler
Indiana University
Francis Catania
Eileen Kolman
Loyola University of Chicago

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL IN MICROFICHE ONLY HAS BEEN GRANTED BY
Karen S. Gallagher

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

HE 019 260

A Presentation to the Association for the Study of Higher Education, National Meeting, February 20, 1986, San Antonio, TX.

ASHE Association for the Study of Higher Education
The George Washington University/One Dupont Circle, Suite 630/Washington, D.C. 20036
(202) 296-2597

This paper was presented at the Annual Meeting of the Association for the Study of Higher Education held at the Gunter Hotel in San Antonio, Texas, February 20-23, 1986. This paper was reviewed by ASHE and was judged to be of high quality and of interest to others concerned with the research of higher education. It has therefore been selected to be included in the ERIC collection of ASHE conference papers.

Personal and Organizational Factors Affecting Faculty Productivity: The Socialization Process in Graduate School

Like other organizations, academic organizations face evaluative tasks. Because the main "product" of universities is the educated person, there are innumerable problems in the evaluation process that other organizations do not face. Distinguishing between inputs and outputs is difficult. Problems arise in comparing individual graduates in one university and across institutions, and simply identifying desired outcomes is a hard task. Because of these inherent problems in evaluating outcomes of universities, theory has an important place in trying to understand aspects such as behavioral outcomes in academic organizations. As many scholars have noted, however, development of a conceptual framework for studying outcomes of academic organizations also poses difficulties (Bess, 1984; Light, 1974; Lodahl & Gordon, 1972, 1973; Smart & Elton, 1975). With these constraints in mind, the dimensions of Brim & Wheeler's (1966) framework for analysis of the socialization process in organizations have been utilized in designing this study of scholarly productivity.

The Brim and Wheeler framework is illustrated in Table 1. The intervening factors are either personal or organizational characteristics which have some impact on socialization outcomes. The impact comes through some combination of the three

intervening processes - norms governing the system, specific behavior patterns to be learned, and the structure of the reward system for learning. Both the individual and the organization are affected by elements from the broader social context, so the three processes may not have an equal impact on all socializing settings. An adequate theory of socialization outcomes for academic organizations will come when the most relevant factors, their linkages through the intervening processes to specific outcomes, and the conditions under which such patterns hold have been investigated.

Insert Table 1 about here

The study reported here is an initial step toward understanding the outcomes of graduate education in one university. More specifically, this outcome study focused on one of the least debated goals of doctoral training, the production and dissemination of knowledge. This study sought to understand the relationship between the productivity of graduates of doctoral programs and various measures of the socialization process of graduate school. The impetus for this study was twofold. The dean of the graduate school in which these doctoral programs were housed needed relevant data about the graduates of the various doctoral programs in order to plan long range program goals. More importantly, the dean recognized that an assessment of organizational outcomes had to incorporate the diversity found

among academic disciplines and individual graduates.

THE CONCEPTUAL FRAMEWORK

The theoretical framework for analysis of socialization in organizations developed by Brim & Wheeler (1966) was derived from work presented at a conference on socialization after childhood sponsored by the Social Science Research Council. Wheeler narrowed his examination to the qualities of large-scale bureaucratic organizations in socializing people after childhood. His specific focus was on socialization factors found in people processing organizations like schools, prisons, and mental hospitals. He identified three dimensions as affecting socialization outcomes: norms, performance, and rewards.

The first dimension of this framework includes the norms governing the system. Intervening in this dimension is the academic organization's capacity to provide clear and unambiguous norms for its students and the degree of consensus about those norms. It also depends upon the amount of time available for interaction with the students in order to communicate effectively what the norms are. Furthermore, though less obvious, it depends on the absence of competing definitions of the norms that might be espoused by others in positions to influence the students. This element is particularly relevant to a study of how graduate school imparts the value of scholarship and how the other aspects of academic life, specifically teaching, are treated. The university may be able to provide clearer norms for some of its students than for others, depending on the time available for

interaction, the students' position in the formal and informal structure of the university, and on their interaction with professors and other socializing agents.

The university's capacity to provide relevant performance opportunities, the second dimension of Brim and Wheeler's framework, depends on several factors: previous postsecondary experiences of the students, the university's capacity to match students with the appropriate program objectives, the amount of time students spend in close interaction with those who can teach them the required performance, and the extent of external support provided by the university. The extent to which these opportunities are taken advantage of form specific behavior patterns to be learned by graduate students.

The third and last dimension of the framework is the reward/sanction structure extant in the organization. The university's capacity to selectively reward its students depends upon its relationship to the external environment, including the extent of its power to place graduates in positions for which their training prepares them. The university's capacity to reward the students will also depend upon the nature of its resources, including its power to provide status, prestige, money or other valued items in return for acceptable performance. The ability to selectively reward students, as well as the capacity to teach them norms and required performances, clearly depends on the quality of the socializing agents, the faculty, brought into the university.

Application of this framework to the analysis of aggregate outcomes in the university requires identifying the socialization settings, using indicators of the three dimensions at the organizational level, and representing the input from the individual student. The potential of this framework to enhance the ability to explain scholarly productivity and to understand the differences in socialization settings within the university constitute the major foci of this study.

METHODS

Data Source

A 56-question survey was sent to 1050 Ph.D. and Ed.D. recipients who graduated between 1963 and 1984 from a private, urban university (a Research II institution using the Carnegie classification). The overall response rate of 70 percent resulted in 707 completed, usable questionnaires which contained 168 variables. From this pool, 271 respondents were selected because because they reported current faculty appointments in universities. Table 2 shows gender and age characteristics of this sample. Analysis and follow-up interviews of non-respondents suggest that the data are representative, reliable, and valid.

Insert Table 2 about here

Research Questions

Two research questions guided this study. First, are

differences in recent faculty productivity affected by the socialization process of graduate school? Second, are personal and organizational socialization factors of graduate school relevant indicators of faculty productivity?

Independent Variables

Using Brim and Wheeler's framework and dividing the three dimensions between organizational and personal socialization dimensions, the following indicators of norms, performances, and rewards were used as independent variables. The capacity of the organization to present clear norms was measured by classifying the 16 graduate departments into Biglan's (1973a) model of academic disciplines. This model expanded Kuhn's (1970) concept that paradigms largely determine the technology of scientific fields into a three-dimensional model of academic subject areas. The first dimension of Biglan's (1973a) model is categorized as hard-soft, where the hard or scientific fields are characterized by a paradigm or agreed-upon body of theory. The second dimension is called pure-applied, where pure academic fields are not concerned with applications to practical problems. The third dimension is life-nonlife, where the life-oriented academic fields place an emphasis on the study of living systems. Table 3 shows the resulting six clusters made up of the original 16 academic departments with average productivity scores and number of respondents in each cluster.

Insert Table 3 about here

The capacity of the organization to provide relevant socialization performance opportunities was measured by an estimate of the productivity of the student's dissertation advisor. Respondents were asked to indicate the kinds of activities from a list of 19 choices that included publishing articles and books, presenting papers at scholarly meetings, and receiving research funding. They also estimated the strength of their graduate department's emphasis on research and scholarship.

The indicators of the organizational reward system were the resources the university offered the graduate students during their doctoral studies and included financial aid based on performance, perceived status of graduate program, and perceived impact of the doctorate on later career.

The personal variables representing the input into this framework from the individual students were selected as those most closely corresponding to the dimensions of Wheeler's framework and those suggested by theory and previous research on predictors of productivity. Because the respondents in this study had received their doctorates, the assumption was made that as graduate students they were capable of the learning the norms and required performances of their departments. But there are several personal factors and attributes that may have intervened and affected the socialization outcomes. For instance, the individual's capacity to learn norms is affected by the amount of time spent within the socializing organization. The respondent's

status as a fulltime or parttime graduate student indicated this time element in the socialization process.

The individual's capacity to perform was measured by several indicators. The underlying assumption in developing this variable was that graduate students have values and orientations similar to faculty members, an assumption supported by Creager (1970), Bayer (1971), and Bess (1978). This variable was created by measuring the type and frequency of productivity the respondent engaged in during graduate school (Clemente, 1973; Thompson & Zumeta, 1985) and the value placed on scholarship by each respondent.

In addition, indices of motivation were used as indicators of the factors affecting respondents' performance. These included variables used in previous studies of productivity: gender (Blackburn, Behymer, & Hall, 1978; Boice & Johnson, 1984; Clemente, 1973; Erkut & Mokros, 1984), age (Bayer & Dutton, 1977; Fulton & Trow, 1974; Over, 1982), year degree was awarded (Berkson, 1984; Clemente, 1973; Perrucci, O'Flaherty, & Marshall, 1983), and reason for going to graduate school.

Dependent Variable

The criterion variable in this study is an aggregate measure of faculty productivity. Respondents were presented with a list of 20 activities and were asked to report on types of scholarly activities engaged in, like publishing articles and books, attending professional meetings, presenting at scholarly meetings, obtaining external funding, and editing journals, and

to report on the frequency of their activities since receiving their degrees.

Data Analysis

Tests of ANOVA were conducted to determine the differences in productivity among the graduates. The dependent variable, faculty productivity, was interval level with a range of 0 to 77, a mean of 29.09 and a standard deviation of 16.21, and the independent variables were categorical.

Standardized partial regression coefficients were calculated to provide an assessment of the predictive utility of each independent variable using the stepwise selection method of regression analysis.

RESULTS

Results of the ANOVA tests showed that faculty productivity differed on both personal and organizational socialization variables. As Table 4 shows, a statistically significant difference was found at the $p<.001$ level on all organizational factors except the pure-applied dimension of Biglan's model and the organizational reward structure. On all the personal variables, only gender and reason for attending graduate school failed to show significant differences at the $p<.05$ level. (See Table 5.)

Insert Tables 4 and 5 about here

Five predictor variables explained 25.9% of variance in the criterion variable. In all 9.3% of variance in faculty productivity could be explained in terms of the professional age of the respondent, in other words, the amount of time since the respondent completed the degree. An additional 8.5% of variance, $F(2,261)=28.34, p<.001$, was attributable to previous productivity as a graduate student. The productivity of the advisor, Biglan's hard-soft dimension, and age contributed 8.1% of variance. When analyzed in conjunction with these predictor variables, gender, reason for going to graduate school, organizational reward structure, parttime-fulltime status, and the other two dimensions of the Biglan model did not exert significant influence on faculty productivity.

DISCUSSION

This study attempted to test the Brim and Wheeler framework of socialization using a sample of current university faculty who received their doctorates from the same institution and factors related to productivity. In addition, it examined the effects of the Biglan model as an explanation of productivity differences. In the previous tests of Biglan's model, the model and its three dimensions have been used as criterion variables. Results indicated that several dimensions of the socialization framework appeared to be significant in distinguishing differences in graduate program experiences and faculty productivity. This preliminary evidence indicates the generalizability of the Brim and Wheeler framework to a Research II institution in the

Carnegie typology. However, the use of this framework is descriptive and not meant to imply a test of causality.

In general, faculty productivity in this group tends to be low and the variation in performance high. This sample can be characterized by Blackburn,et al. (1978) categories of producers and nonproducers. The producers are found in the academic disciplines with highly developed paradigms and with life systems focus; they had advisors in graduate school who were also producers and they took on similiar scholarly habits. Early productivity is a strong predictor of subsequent productivity. They went to graduate school fulltime and they have continued to be productive throughout their careers. There are some critical work environment factors which are missing from this study, however, namely the type of institution where the respondents work as faculty and rank were not known.

Although gender and its relationship to productivity have been debated in several studies, the results of this study are not as dramatic as the Blackburn, et al. (1977) or Clemente (1973)
reports. Female doctorates who have faculty appointments have a lower productivity score in most comparisons, but this may be due to type of employing institution or level of appointment. One interesting finding in this study related to gender but not statisitically significant was the difference between women who had no organizational rewards during graduate school and those who had received a high level of support. If producers start

early in their careers, then this finding suggests that reward systems in graduate programs might be one socializing factor to enhance future productivity.

IMPLICATIONS

This study may be useful to administrators other than those in the specific institution under examination. In general, it adds to the current body of research arguing for more consideration of diversity in decision making concerning faculty. Such consideration is important in such processes as reviewing department productivity rates, selecting faculty for goverance and interdisciplinary projects, hiring new faculty, promoting and rewarding faculty, and organizing faculty development plans.

Moreover, this study indicates that single standards of productivity cannot be developed for all faculty. Faculty productivity needs to be viewed as behavior affected by graduate school experiences, academic discipline, work environment, and personal factors.

Table 1

Framework for Analysis of Socialization in Academic Organizations

Socialization Dimensions	Intervening Factors and Processes		Socialization Outcomes
	Organizational	Personal	
Norms	Capacity to present clear norms.	Capacity to learn the norms.	
Performances	Capacity to provide performance opportunities.	Capacity to perform.	Scholarship Teaching Service
Rewards	Capacity to reward selective performance.	Motivation to perform.	

Table 2

Number of Respondents by Gender and Age

Gender	40 years or younger	41-60 years	61 years or older	Total
Male	53	125	6	184
Female	31	47	6	84
Total	84	172	12	268

Note. Three questionnaires did not have this information.

Table 3

Number of Respondents and Departments and Mean Productivity Scores by the Biglan Model Clusters

H-N-P	H-L-P	H-N-A	S-N-P	S-L-P	S-L-A	Total
6	31	9	68	54	96	264
1	4	1	4	2	4	16
25.67	37.68	44.78	23.93	33.31	26.34	29.09

Note. The cluster abbreviations should be read as follows: H means hard; S means soft; N means non-life; L means life; P means pure; A means applied. The clusters are made up of the three dimensions of the Biglan model.

Table 4

Mean Productivity Scores for the Organizational Variables Affecting Socialization

Variables	n	Means	F
Norms			
Biglan Model			
Hard	46	37.50	12.948***
Soft	213	27.42	
Pure	158	29.87	0.37
Applied	104	28.15	
Life	189	31.19	10.764***
Performance			
Advisor Productivity			
Little	50	25.12	9.97***
Passive	168	27.34	
Active	53	38.55	
Rewards			
Selective Reward System			
None	34	24.35	0.15
Mixed	193	29.43	
Great	42	32.19	

***$p < .001$

Table 5

Mean Productivity Scores for the Personal Variables Affecting Socialization

Variables	n	Means	F
Norms			
Parttime Status	96	25.83	6.153*
Fulltime Status	163	31.12	
Performance			
Graduate Productivity			
Little	36	21.92	7.258**
Passive	191	28.66	
Active	42	37.40	
Reward			
Gender			
Male	184	30.55	1.947
Female	85	26.34	
Age			
40 years/less	84	27.00	3.948*
41-60 years	172	31.06	
60 years/older	12	19.83	
Professional Age			
1963-1969	61	36.23	12.938**

1970-1978	124	30.11	
1979-1984	86	22.90	
Reason for Graduate School			
Scholarship/Research	137	30.84	3.333
Vocationalism/Careerism	122	26.96	

*$p<.05$

**$p<.001$

REFERENCES

1. Bayer, A.E. College and University Faculty: A Statistical Description. Washington, D.C.: American Council on Education, 1970.

2. Bayer, A.E. & Dutton, J.E. Career age and research-professional activities of academic scientists. Journal of Higher Education, 1977, 47, 259-281.

3. Berkson, G. The next generation: The relation between funding and productivity in mental retardation research. Paper presented at the annual meeting of the American Academy on Mental Retardation, Minneapolis, MN, May, 1984.

4. Bess, J.L. Anticipatory socialization of graduate students. Research in Higher Education, 1978, 8, 289-317.

5. Bess, J.L. Maps and gaps in the study of college and university organization. In J.L. Bess (Ed.) College and University Organization: Insights from the Behavioral Sciences. New York: New York University Press, 1984.

6. Biglan, A. The characteristics of subject matter in different academic areas. Journal of Applied Psychology, 1973a, 57, 195-203.

7. Biglan, A. Relationships between subject matter characteristics and the structure and output of university departments. Journal of Applied Psychology, 1973b, 57, 204-213.

8. Blackburn, R.T., Behymer, C.E., & Hall, D.E. Research note: Correlates of faculty publications. Sociology of Education, 1978, 51, 132-141.

9. Boice, R. & Johnson, K. Perception and practice of writing

for publication by faculty at a doctoral-granting university. Research in Higher Education, 1984, 21, 33-43.

10. Braxton, J.M. Teaching as performance of scholarly-based course activities: A perspective of the relationship between teaching and research. The Review of Higher Education, 1983, 7, 21-33.

11. Brim, O.G. Jr. & Wheeler, S. Socialization after Childhood: Two Essays. New York: John Wiley & Sons, 1966.

12. Clemente, F. Early determinants of research productivity. American Journal of Sociology, 1974, 79, 409-419.

13. Creager, J.A. The American Graduate Student: A Normative Description. Washington, D.C.: American Council on Education, 1971.

14. Creswell, J.W. & Bean, J.P. Research output, socialization, and the Biglan model. Research in Higher Education, 1981, 15, 69-91.

15. Dill, D.D. & Morrison, J.L. Ed.D. and Ph.D. research training in the field of higher education: A survey and a proposal. The Review of Higher Education, 1985, 8, 169-186.

16. Erkut, S. & Mokros, J.R. Professors as models and mentors for college students. American Education Research Journal, 1984, 21, 399-417.

17. Fulton, O. & Trow, M. Research activity in American higher education. Sociology of Education, 1974, 47, 29-73.

18. Hesseldenz, J.S. & Smith, B.S. Computer-prepared questionnaires and grouping theories: Considerations for mail surveys in academic settings. Research in Higher Education, 1977, 6, 85-94.

19. Kuhn, T.S. The Structure of Scientific Revolutions. Chicago: University of Chicago Press, 1970.

20. Light, D. Jr. Introduction: The structure of the academic profession. Sociology of Education, 1974, 47, 2-28.

21. Over, R. Does research productivity decline with age? Higher Education, 1982, 11, 511-520.

22. Pelz, D.C. & Andrews, F.M. Scientists in Organizations. New York: John Wiley & Sons, 1966.

23. Perrucci, R., O'Flaherty, K., & Marshall, H. Market conditions, productivity, and promotion among university faculty. Research in Higher Education, 1983, 19, 431-449.

24. Roskins, R.W. Implications of Biglan model research for the process of faculty advancement. Research in Higher Education, 1983, 18, 285-297.

25. Smart, J.C. & Elton, C.F. Goal orientations of academic departments: A test of Biglan's model. Journal of Applied Psychology, 1975, 60, 580-588.

26. Smart, J.C. & McLaughlin, G.W. Reward structures of academic disciplines. Research in Higher Education, 1978, 8, 39-55.

27. Thompson, F. & Zumeta, W. Hiring decisions in organized anarchies: More evidence on entrance into the academic career. The Review of Higher Education, 1985, 8, 123-138.

28. Thompson, M.E. & Brewster, D.A. Faculty behavior in low--paradigm versus high-paradigm disciplines: A case study. Research in Higher Education, 1978, 8, 169-175.